



# Mapping variability in allocation of Long-Term Care funds across payer agencies in OECD countries<sup>☆</sup>

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## ABSTRACT

**Introduction:** Long-term care (LTC) is organized in a fragmented manner. Payer agencies (PA) receive LTC funds from the agency collecting funds, and commission services. Yet, distributional equity (DE) across PAs, a precondition to geographical equity of access to LTC, has received limited attention. We conceptualize that LTC systems promote DE when they are designed to set eligibility criteria nationally (vs. locally); and to distribute funds among PAs based on needs-formula (vs. past-budgets or government decisions).

**Objectives:** This cross-country study highlights to what extent different LTC systems are designed to promote DE across PAs, and the parameters used in allocation formulae.

**Methods:** Qualitative data were collected through a questionnaire filled by experts from 17 OECD countries.

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**Results:** 11 out of 25 LTC systems analyzed, fully meet DE as we defined. 5 systems which give high autonomy to PAs have designs with low levels of DE; while nine systems partially promote DE. Allocation formulae vary in their complexity as some systems use simple demographic parameters while others apply socio-economic status, disability, and LTC cost variations.

**Discussion and conclusions:** A minority of LTC systems fully meet DE, which is only one of the criteria in allocation of LTC resources. Some systems prefer local priority-setting and governance over DE. Countries that value DE should harmonize the eligibility criteria at the national level and allocate funds according to needs across regions.

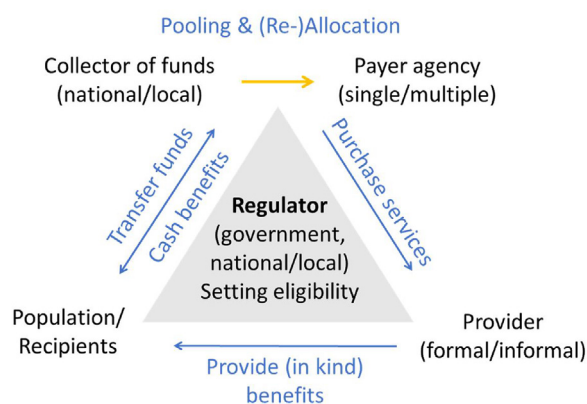
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## 1. Introduction

*Long Term Care* (LTC) is a set of services aimed to reduce or manage the deterioration in health status in patients with a degree of long-term dependency, or to alleviate pain and suffering [1]. It includes personal care, i.e. help with activities of daily living (ADL) such as eating, bathing, washing; social care, i.e. assistance services that enable a person to live independently helping with instrumental activities of daily living (IADL) such as shopping, laundry, cooking; cash allowances to buy the aforementioned services, i.e. monetary benefits for people with needs for ADL and/or IADL; and medical or nursing LTC, e.g. wound dressing, administering medication, health counselling, palliative care, pain relief and medical diagnosis with relation to a long-term condition [2]. As need for LTC continues to grow, it will represent increasingly significant expenses for health and social care systems in most high-income countries, as well as for the older people and their families [3]. Therefore, access to LTC, particularly publicly-funded LTC, is an important public policy topic being dealt with policymakers in many high-income countries. Recent studies have analyzed issues of equity in access to and use of LTC of different populations among and within European countries [4–8]. From a public policy perspective, the question of allocation of authority in decision-making in health and social care is not trivial, and pops up also in debates around centralization versus decentralization of authority over laws, money and resources [9]. The literature related to the public funding of LTC at the system level deals mainly with collection of funds. For example, studies analyze the various types of taxation or insurance, their advantages and disadvantages, the amount and share of public funding, in each country [10,11]. Only a few studies focus on the allocation of public funds to LTC payer agencies (PAs) [12,13]. Usually, multiple PAs receive public LTC funds from a national or local collector of funds, and commission or purchase LTC services from providers on behalf of recipients [14]. Alternatively, PAs provide cash benefits to recipients (see Fig. 1).

In countries with multiple payers, PAs can be local governments or health/LTC insurance plans, while in countries with a single payer, the PA can be the central government itself or another agency such as the national insurance institute. In single payer systems, the agency that collects funds, usually the central government, is also the PA, as it commissions services from providers or transfers cash benefits to recipients directly. PAs, thus, have an important role in commissioning the LTC services and ensuring their supply for those in need, according to eligibility, in an equal and efficient way [15]. We argue that the way resources are allocated among PAs and the level of government that sets eligibility criteria is a precondition for equity in access to LTC. Our paper analyzes issues of equity in resource allocation from a public policy perspective, and focuses on the PA, rather than the individual, as unit of analysis.

Analyzing “equity” in public policy involves understanding “who gets what and by what rules”. Several norms or criteria can be applied to allocate public resources or services among individuals, populations, regions or PAs. According to Blanchard [16] there are seven types of ‘fairness’ norms by which public resources or services can be allocated: (1) strict equality, everybody gets the same share of services; (2) need, shares are distributed in proportion to individuals’ needs; (3) effort or money expended, where shares are distributed according to the efforts or money people invested for the public service; (4) results, i.e. shares of services are distributed in proportion to the results expected for each individual; (5) ascription, shares are allocated according to predefined characteristics of individuals such as age, gender, socioeconomic status; (6) procedure, shares are allocated according to a certain procedure such as ‘first come, first serve’, or lottery; and (7) local demand or preference [16]. These norms may vary among countries depending on their culture or tradition. We adopt Daniel’s [17] definition of distributional equity as the “most desirable distribution of goods and services in an economy”, choosing the norm of ‘need’ as the most desirable way to distribute LTC resources among PA. If resources are distributed according to other criteria, non-needs-related factors such as socio-economic or demographic criteria may gain importance: for instance, the gaps between rich and poor, or young and old regions may widen since rich or young areas are in a better position to collect funds. Yet, regions with a more advantageous socio-economic structure (e.g. lower share of low-income groups, younger) also tend to have a lower need for long-term care than other regions. Pooling resources and redistributing them according to ‘need’ may potentially improve allocation of resources, and promote equity among regions. Therefore, we use the term ‘distributional equity’ referring to LTC system designs that distribute resources among regions or PA based on need and promote equity among residents of these regions/PAs. While, we acknowledge that other norms may be also used for allocating resources, we propose in this paper a conceptual framework of ‘distributional equity’ based on need for analyzing LTC systems across countries (Box 1).



**Fig. 1.** Representation of LTC publicly funded systems and the payer agency. Source: adapted by authors based on [14].

**Box 1: Terms dictionary**

**Long-term care (LTC):** set of services aimed to reduce or manage the deterioration in health status of patients with a degree of long-term dependency, or to alleviate pain and suffering [1]. It includes personal care, social care, cash allowances, and medical or nursing LTC [2]. In this work we excluded medical or nursing LTC from our analysis.

**Payer agency (PA):** agency that receives public LTC funds from a national or local collector of funds, and commissions or purchases LTC services from providers on behalf of recipients.

**Eligibility criteria:** criteria by which entitlement to publicly-funded LTC care, and the respective size of the (cash) benefit, type and amount of (in kind) care, and as such also the basket of services itself, are determined. Examples of criteria are age, dependency level, cognitive impairment level, functional disability. These criteria lead to rules, tools or algorithms used to assess individuals' eligibility to LTC.

**Horizontal equity:** equal treatment of people who have similar 'needs' for care and support, i.e. equal access to care in terms of care packages for individuals with the same need.

**Distributional equity (DE):** payer equity, which means in many countries geographical horizontal equity of access to care services. We define a LTC system as promoting DE if: (1) there are national eligibility criteria (not different criteria in different regions) and (2) resources are allocated to PAs based on need-formula (alternatively if there is a single payer system where it is the same agency that collects the funds is the PA)

## 2. Conceptualizing distributional equity in the context of LTC

PAs need to receive the respective funds to commission LTC services (yellow arrow in Fig. 1). We argue that *distributional equity* (DE) of LTC funding, a precondition to geographical equity of access (of individuals) to LTC, is stronger when two following conditions are met in the national LTC system design. First, when there is a common/standardized eligibility criteria, determined at the national level rather than being set at a regional level with variances, or not being defined at all. Eligibility criteria defines the rules of entitlement to publicly-funded care, and the respective size of the (cash) benefit, type and amount of care, and services. We also argue that there should be consistent rules to identify individuals in need of LTC, and thus ensure *horizontal equity*, defined as equal treatment for equal need. The second condition of DE is that funds are distributed in a 'fair' manner, it means, using objective and transparent criteria that reflect LTC needs: they are redistributed to PAs according to the needs of the population they serve through a needs-formula. Distribution of funds according to a (predicted) needs-formula alone does not promote DE, if each region/PA commissions a different set of services, or does so according to different eligibility criteria. Therefore, according to our conceptual framework both conditions should be met concomitantly in order to promote DE (Fig. 2).

In our conceptual framework, DE is composed by two elements of LTC system design. The first relates to eligibility criteria to access to public-funded LTC, which differs from individual assessment (vertical axis in Fig. 2). Eligibility criteria play an important role in the analysis of distributional equity, because they represent the 'gateway' or common principles for accessing publicly funded LTC [18]. Need for care, i.e. if an individual has difficulties with personal or domestic care and would benefit from assistance, is not necessarily the same as "need for publicly-paid care", and it is eligibility criteria that determines the amounts and types of publicly-funded formal care that the individual in need will receive, while the remaining need is usually complemented by unpaid or privately-paid care [18,19]. We assume that to assure horizontal equity, PAs

should commission the same types of care according to needs, i.e. same eligibility criteria across PAs. This occurs when eligibility criteria are set at the national level, or in systems with a single payer (top of vertical axis in Fig. 2). When eligibility criteria are set at the local level or by PAs (bottom of vertical axis), there might be unwarranted variations in the types and amounts of care commissioned on behalf of individuals with the same need across regions or PAs, thus hampering DE. Harmonized commissioning of services does not necessarily mean commissioning enough quantities or adequate types of services. Eligibility can be generous or tight regardless the level that sets it.

The second element of LTC system design that contributes to distributional equity is the level of concentration and pooling of LTC funds, and the way funds are allocated to PAs (horizontal axis in Fig. 2). We conceptualize that distributional equity is larger when LTC funds are pooled by central government or agency and reallocated among PAs across regions according to a needs formula (right side of horizontal axis) or in a single payer system, where the agency that collects and pools funds is also the PA. The rationale is that pooling and redistribution of funds enables cross-subsidy between poor and rich, old and young, or unhealthy and healthy individuals or areas, which in turn, promotes a fairer distribution of funds [14]. Relative needs formula to allocate central government funds strengthen the link between provision and need [20]. Distribution of funds according to a need formula is also a mechanism to ensure local governments the means to supply uniform care [21]. The more objective and needs-based the distribution of funds, the fairer it is. We argue that countries with LTC allocation formulas based on needs or risks, have a fairer way of distributing LTC funds than countries where, for example, past budget is in place, or where local authorities collect the funds themselves but do not pool and redistribute (left side of horizontal axis). Using prior utilization and expenditure to allocate funds among PAs is somewhat arbitrary and may perpetuate inefficiencies and inequities [20,21]. In systems with competing PAs, past budgets also create incentives for risk selection against some easily identifiable subgroups [12]. In non-competitive systems, an unequal distribution of funds may lead to delays or unwanted rationing of care, or unequal increases in local taxes and user charges, thus hampering equity in access to care [20]. We emphasize that a fair allocation of funds does not mean that LTC systems allocate enough amounts of funds. Fair allocation is not directly related to the generosity of the funds, and there might be shortages of funds even in a fair allocation system.

DE promotes horizontal equity, with harmonized national eligibility criteria for a given level of need and vertical equity, where money follows need, and are allocated based on an objective needs-formula. It is a necessary precondition for equity of access at the population level, although not sufficient alone. Without DE, two people with the same level of need, might be eligible to different types or quantities of care across payers, or these payers might have a different ability to purchase the care needed. But it is also important to reduce barriers on the demand side, such as lack of information, administrative hurdle, complexity of claiming. On the supply side, variations in the quality of care provided across PAs may exist [22,23].

Summarizing, a LTC system is defined to promote DE if:

- i) There are national eligibility criteria (not different criteria in different PAs/ regions) AND
- ii) Resources are pooled and reallocated to PAs according to a need-based formula (alternatively if there is a single payer system where it is the same agency that collects the funds and is PA)

From the conceptual framework above we identify three models of LTC equity design: (1) designs that meet DE (single payer or need-based allocation of resources and eligibility criteria uniform

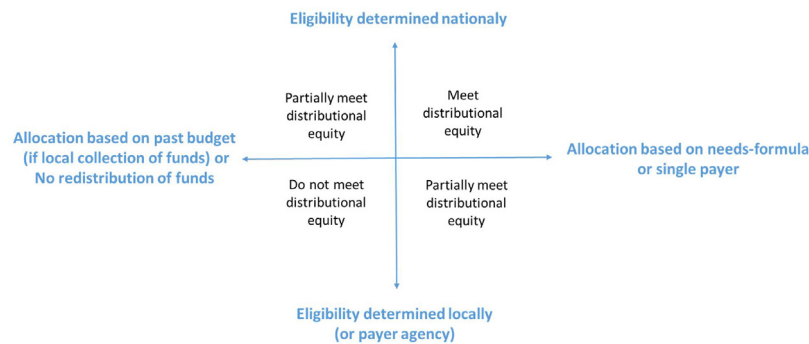


Fig. 2. Conceptual framework of the dimensions of distributional equity.

across country); (2) systems that partially meet DE, i.e. mixed distribution (systems where either allocation is not based on needs formula or eligibility criteria is not set at the national level); and (3) systems that do not meet DE (neither allocation is based on need nor eligibility is unified).

### 3. Objectives

Our study aims to highlight to what extent different LTC systems are designed to promote DE among PAs, across 25 countries using the conceptual framework presented above. We contribute to the literature on LTC equity in three main ways. First, we present a comprehensive cross-country comparison of LTC system designs. Second, we compare to what extent LTC systems' design promote DE across PAs: we analyze what level of government sets eligibility criteria and how countries allocate funds to PAs, focusing on the distribution formulae. Third, we describe and unpack the parameters used by the different countries in their needs-allocation formulae. It is important to note that we analyze the countries' LTC system design, not the generosity of funds or the contents, amounts or types of care, or how implementation is done in practice.

### 4. Methods

The data and information presented in this paper are collected by the authors who are experts from the European Observatory's Health Systems and Policy Monitor (HSPM) network ([https://www.hspm.org/hspm\\_members.aspx](https://www.hspm.org/hspm_members.aspx)) or are experts on LTC beyond HSPM. In order to collect detailed qualitative data in a comparable manner, RW and AES developed a questionnaire based on the conceptual framework (see supplementary online material).

The questionnaire included all settings of LTC (home, institutions and day care centers) and different types of services for medical, personal care, social care, and cash allowances. We decided to exclude medical or nursing LTC because in most countries that participated in the study these services are part of the healthcare system for which eligibility rules and issues are different compared with LTC/social systems. Also there is a broad literature on this topic in healthcare (pooling and allocation of funds, and basket of services and eligibility criteria), thus we preferred to focus on non-medical LTC in the current article. Since most LTC funds are dedicated to older people, we do not examine specific LTC conditions for disabled young people or children. Finally, as we analyze LTC system designs, we limited our study to publicly funded services or informal care that is reimbursed by the governments.

The experts (co-authors) filled the questionnaire sent by email between November 2018 and April 2019, and helped to analyze the data. Analysis of the data aimed to describe LTC systems, not countries, as one country may have more than one system depending on where the care is provided and type of care (e.g. institutional vs.

community care), or type of benefit (in kind vs. cash). LTC-systems are noted using the criteria defined in our conceptual framework in order to consolidate models of LTC regarding the level of DE. Finally, we summarized and analyzed the components of allocation formulae of the various systems. All the results were reviewed and crosschecked by the authors in order to enhance trustworthiness.

### 5. Results

#### 5.1. LTC systems design and the extent to which they promote distributional equity

Table 1 presents the summary of the data provided by country-experts about the components and conditions of LTC systems that compose DE. Regarding eligibility, in 15 out of the 25 LTC systems analyzed set eligibility criteria at the national level. In Spain, Canada, the Netherlands, Poland (for community care), and Austria and Italy (in kind benefits), LTC systems are decentralized, and local governments (health insurers/plans for the Netherlands) are free to decide on the eligibility, i.e. the types and amounts of care they pay for. Norway, Sweden, France, Portugal and England set basic eligibility criteria at the national level but local governments or authorities further adjust and redefine it.

Regarding allocation of funds, in most countries, the agency that collects the funds for LTC is the central government or a combination of the central with subnational (regional or local) governments. From our sample, in only in two systems were the majority of funds collected sub-nationally: Canada and Germany. In Germany, individuals are assigned an LTC plan associated with the specific health plan of that individual. German LTC plans collect funds separately from health plans, but do not compete on members, funds or services. Funds from LTC plans in Germany are pooled and redistributed retrospectively according to de facto expenses. In Canada, roughly 77% of the funds are collected by the PA (provinces and territories) but these are not pooled nationally. The other 23% come from federal transfers to the provinces and territories to fund their healthcare systems. These funds are not earmarked and are not pooled or redistributed across provinces and territories. In Canada, the universal health coverage system does not include LTC services, which are administered and legislated solely at the provincial and territorial levels. Therefore, there is no mechanism for ensuring distributional equity across the country in the LTC sector as there is with hospitals and physician services under the Canada Health Act. Three out of eighteen LTC systems with multiple payers do not pool and redistribute funds nationally (Canada, the Netherlands (community, IADL/day care) and Germany, that has retrospective risk equalization).

In contrast with the stark dominance of countries where a central collector of funds is present, in most systems there are multiple payers. Only in seven out of the 25 systems there is a single payer



**Table 1**  
Components of LTC systems that compose design models, by country.

Country	What agency sets eligibility criteria for the LTC services?	What agency collects the funds?	What is the PA?	Are funds pooled and redistributed?	How are they redistributed?	Sources
Austria (cash)	Central government	Central government	Central government	N/A	Allocation formula	[24–27]
Austria (in kind)	Local governments	Central government	Local governments	yes		[28–33]
Canada	Regional governments (provinces)	Regional governments about 77 %, federal transfers about 23 %	Regional governments (provinces and delegated health authorities)	no		
Croatia (institutional)	Central government	Central and Local governments	Central government	N/A	Past budget	[34–40]
Croatia (community)	Central government	Central government	Central government	N/A		[41,42]
Cyprus	Central government	Central government	Central government	N/A		
Czech Republic (cash)	Central government	Central government	Central government	N/A		[43,44]
Czech Republic (in kind)	Central government	Central government (85 %) and health plans (15 %)	Local governments	yes		
France (community)	Central government	Central (40 %) and Local governments (60 %)	local government	yes (40 %)	Allocation formula	[45–47]
France (institutional)	Central government	Central and Local governments	local government	yes (40 %)	Allocation formula	
Germany	Central government	LTC plans, administered by the health plans	LTC plans	yes	expenses (equalization fund)	[48,49]
Italy (in kind)	Local governments	Central and Local governments	Local governments	partially	Government decisions and local authorities collected funds	[50–55]
Italy (cash)	Central government	Central government	Central government	N/A	Past budget and formula	[56,57]
Israel	Central government	Central government	Central government	N/A		[58–66]
Lithuania	Central government	Central government	Central and Local governments	yes		
the Netherlands (institutional)	Central government	Central government	Health plans (care offices)	yes	Allocation formula	[67–70]
the Netherlands (community, ADL)	District nurses	Health plans and Central governments	Health plans	yes	Allocation formula	
the Netherlands (community, IADL/day care)	Local governments	Central government	Local governments	no	Allocation formula	[71–74]
Norway	Local governments	Central and local government	Central and Local governments	yes		
Poland (institutional)	Central government	Central and local governments	Local governments	Paritally	past budet and government decision	[7576–80]
Poland (community)	Local governments	Central and local governments	Local governments	Partially	past budget and government decision	
Portugal	Central government	Central government	Local governments	yes	Allocation formula	[81–84]
Spain	Local governments	Central and Local governments	Local governments	yes	Automatic updates	[85–88]
Sweden	Local governments	Central and Local governments	Local governments	yes	Allocation formula	[89,103,104]
UK (England)	Central and Local governments	Central and local governments	Local governments	yes	Allocation formula	[90]

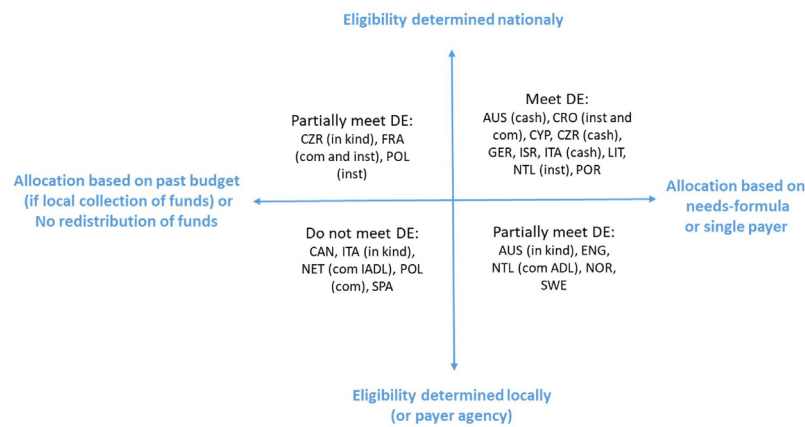


Fig. 3. Distribution of LTC systems according to the models of system design.

where the central government is also the PA (Austria the Czech Republic and Italy for cash benefits, Cyprus, Croatia institutional and community care, and Israel). From the remaining eighteen systems, ten distribute funds according to a specific LTC needs-based formula and the other eight do so based on past budgets, government decisions or a general public-services needs formula. For example, In the Netherlands (community, IADL/day care) funds are collected at the national level together with funds for other services such as education, and are distributed over the municipalities according to an allocation formula that includes, among other criteria, expected need for LTC. However, since funds are not earmarked, once funds are allocated, municipalities can spend the budget as they like (although they have a statutory task to provide iADL care). Some municipalities overspend the allocated budget, whereas others underspend, thus leading to variations in the budget available relative to the existing needs. Fig. 3 presents the countries in our sample distributed among the LTC models.

The detailed models are as follows:

#### I Systems that meet DE

- 1 Eligibility set nationally, Funds collected nationally, single payer: Austria (cash benefits), Croatia (institutional and community), Cyprus, Czech Republic (cash benefits), Israel, Italy (cash benefits)
- 2 Eligibility set nationally, Funds pooled, and redistributed to multiple payers based on needs-formula: Germany, Lithuania, the Netherlands (institutional care), Portugal

#### II Systems that partially meet DE

- 1 Eligibility set nationally, Funds collected locally, not pooled (no redistribution): Italy (cash benefits), France (40 % pooled and redistributed based on need formula, the rest is locally collected), Poland (institutional care)
- 2 Eligibility set nationally, Funds collected centrally, and redistributed based on past budget: Czech Republic (in kind benefits)
- 3 Eligibility set locally, Funds pooled, and redistributed to multiple payers based on needs-formula: Austria (in kind benefits), England, the Netherlands (IADL, day care, ADL), Norway, Sweden

#### III Systems that do not meet DE

- 1 Eligibility set locally, Funds pooled and redistributed based on past budgets or government decision: Poland (care in the community)
- 2 Eligibility set locally, Funds collected locally, not pooled (no redistribution): Canada, Italy (in kind benefits), The Netherlands (community IADL care), Spain

#### 5.2. Allocation needs-formulas and parameters

Roughly half of the systems with multiple payers allocate resources among payers based on a LTC needs-formula (France – 40 %, Lithuania, Portugal, Norway, Sweden, Germany, England, the Netherlands for institutional care and community ADL care, Austria for in kind benefits; Czech Republic does that for 15 % of its budget) (see Table 2). Sweden and Norway apply demographic parameters such as marital status, in order to reflect existence of alternative informal care. They also consider spoken language and residence in sparsely populated areas, in order to reflect special caregiver needs. A few countries developed formulas that take into consideration further risk adjusters such as disability or dependency level or chronic diseases (the Netherlands, England) and/or previous years' expenditures (Austria, France, Norway). France further consider socioeconomic parameters such as number of allowance claimants and income of elderly in the region under responsibility of the local authority. In England, the needs-based allocation formulae take account of differences between areas in wage rates, in order to recognise differences in the costs of care driven by factors outside the control of payers (local authorities) and providers. In Germany, although funds are pooled from LTC funds, reallocation occurs only retrospectively according to de facto expenditures. For the detailed formulas of each country see online supplementary material.

#### 6. Discussion

In this paper we propose a conceptual framework where DE promotes both horizontal equity, with harmonized national eligibility criteria; and vertical equity, as funds are allocated based on objective needs-formulas. We argue that DE is a necessary precondition for equity of access at the population level, although not sufficient alone, as in implementation there could be gaps or inconsistencies [7,8]. We analyzed features of 25 LTC systems design in 17 countries to understand to what extent they promote DE of resources from a system design perspective. According to our conceptual framework, 11 systems are characterized by a design that meet DE, i.e. eligibility is set at the national level and allocation of funds among PAs is based on a needs-formula, or there is a single payer. In five systems, the design does not promote DE across PA, these are usually federal or decentralized systems, which give autonomy to PAs. Finally, in another nine systems the system partially promotes DE. Usually institutional care designs meet more DE than community care. In kind benefits are usually designed partially meeting DE, while cash benefits usually meet DE. We found that in roughly half of the LTC systems with multiple payers, funds are allocated accord-

**Table 2**

Parameters used for distributing pooled funds by country\*.

	Demographic (age, gender, marital status, household composition)	Socio-economic (income, education, allowance claimants)	Health/ disability condition (number of ADL limitations, chronic conditions, level of help needed)	LTC costs (previous year, and expected)
Austria (in kind)				x
Czech Republic (15 %)	x		x	
France	x	x		x
Germany				x
Lithuania	x			
the Netherlands (institutional)			x	
the Netherlands (community)	x	x	x	
Norway	x	x		x
Sweden	x			
UK (England)	x	x	x	x

(\*) Note: data from Portugal was not available.

ing to a needs-formula and the other half is either not pooled, or pooled and redistributed according to past budgets or government decisions. Some of the allocation formulae were simple, and might miss factors that influence the risk of needing LTC. For example, except Sweden, LTC systems do not adjust their formulae for ethnicity, or for type of impairment such as cognitive, physical functions, neurological diseases. While for healthcare there is a vast literature on risk adjustment allocation formulas and mechanisms [91,92,20], for LTC, literature is scarce [93]. The complexity of LTC systems and the difficulty of prediction of future costs of LTC might create barriers for a fair distribution of funds based on need. Alternatively, allocation of resources to payers is a part of LTC system designs that has not received enough attention yet or it is believed that the risk of needing LTC is more homogeneously distributed compared to acute care. What is sure is that risk adjustment for many settings of LTC is still immature [94].

DE in LTC has, for some time, been of concern to policy-makers and researchers alike, especially as public resources are scarce and demand for LTC is bound to increase [95]. Regional differences, sometimes coined as the problem of 'postcode lottery' [96], arise in LTC as this field of public policy has emerged from social care, in most countries is under the responsibility of local governments [97]. Regional differences can point to limited horizontal equity in access. To our knowledge, few comprehensive empirical analyses exist hitherto on how LTC resource allocation design diverges regionally, and how such differences might be tied to the mechanisms underlying LTC fund allocation and harmonization of eligibility criteria across countries. Fernandez and Forder [98] identified regional variances in social care per capita expenditure across English local authorities. They mention that part of this variation may be due to different regional supply conditions such as different quality or costs of providers or different capacity to raise local revenue due to variations in the population wealth in the different regions. In a recent study, Gori and Morciano [99] compare how cash-for-care benefits vary in coverage, policy mix and generosity in 6 European countries over time, but their study does not relate to in-kind benefits nor to a broad range of OECD countries. Two different recent trends in LTC system designs may affect the role of PAs and the need of allocation mechanisms in opposite directions. The first, is that organization and regulation of care is increasingly being decentralized and passed on to local authorities, based on the assumption that, if the provision of care is organized close to the recipient, this will lead to more appropriate care solutions [10,13,100,101]. In this case, PAs' role may increase, and so may the need of an accurate and transparent needs-formula. The second trend is the shift from in-kind to cash benefits in order to promote flexibility for recipients in the way and type of care of their preference [99,101]. The tendency is to skip PAs and transfer funds directly from central governments to the recipients through

personal budgets. Examples are Austria, Italy, the Czech Republic. If this trend continues, allocation of resources is likely to change, and the role of the PA might decrease.

In this work we assumed that DE is a main objective of resource allocation for LTC and that the norm to distribute resources should be 'need'. However, DE might not always be the objective of a LTC system, as some systems regard more local utilities, i.e. the extent to which localities value and prioritize LTC, and prefer providing local authorities with autonomy and flexibility to set or adapt eligibility criteria and how to spend their money. As we described in the introduction, there can be various norms through which public policy resources can be distributed [16]. In these systems, the norm chosen to distribute resources might be 'preference'. For example, in a locality people might value more education than LTC, or within LTC, prefer informal care, or prefer institutional care or have other alternatives, than in another locality. There is a tension between DE and local preferences and utility, and systems that choose local utility do not allocate funds based on a formula necessarily, but consider local preferences and priorities [97]. We identify a trade-off between local utility and DE: while local utility favors choice, priority setting and cost consciousness at the local level, it may lead to regional variation in access and quality of LTC services due to variation in local income and priorities. Similarly, DE may reduce regional variation at the expense of local priority-setting and cost control [102].

### 6.1. Limitations

LTC systems are complex and, in our attempt to classify each country into a model, we could not analyze every LTC component or type of care in detail. In other instances, countries' systems may not fit the categories we use in their entirety. For example, the different nuances of services for ADL and IADL, or the extent to which eligibility criteria is objective or can vary by evaluation agent. However, the advantages of observing various countries' experiences in a cross-country comparison outweigh the disadvantages of losing each country's details. Another limitation of this study is that data was collected based on researchers' knowledge, policy documents and literature. However, sometimes detailed data is not available, for example, the exact distribution need-formulas. The absence of documentation on needs-based formula is, in and of itself, valuable information on the importance of equity in the system, which has been overlooked by policy makers. Public policy is not always transparent or done in a methodical manner, and this works attempts to unpack part of the LTC policy-making, which is one of the most relevant nowadays. Finally, this work analyses LTC systems design, therefore, it cannot tell if implementation of the system is indeed homogeneous or if it succeeds in ensuring equal commissioning of

care across payers in practice. However, analyzing it was beyond the scope of this work.

## 7. Conclusions

Two thirds of LTC systems set eligibility criteria at the national level, and one third prefer local governments to determine eligibility according to their own discretion. Most LTC systems delegate commissioning of LTC to local PAs, but only half allocate funds among them according to a needs-formula. Allocation formulas used are often simple and deserve further attention in order to promote DE. Policy makers should pay attention to the extent to which allocation formulas reflect expected care risks and needs and distribute funds in a fair manner, especially as more countries are considering moving towards a system of LTC social insurance.

Distributional equity is one of the objectives of the LTC systems. LTC systems meeting distributional equity are not forcibly those better performing, since local decision making has its advantages. This paper proposes one way of classifying LTC systems based on need for provoking reflection and further research on the equity of LTC systems. In particular, future work is needed in order to analyze the link between LTC system design and outcomes in terms of access, quality and DE.

## Declaration of Competing Interest

The authors certify that they have conflict of interests, they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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## Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.healthpol.2020.02.013>.

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